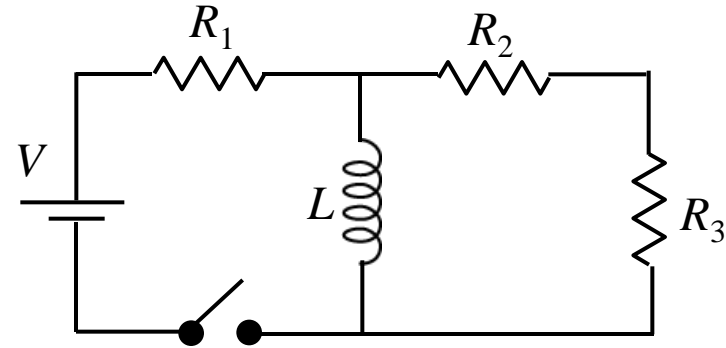


# Calculation

The switch in the circuit shown has been open for a long time. At  $t = 0$ , the switch is closed.

What is  $dI_L/dt$ , the time rate of change of the current through the inductor immediately after switch is closed



## Conceptual Analysis

Once switch is closed, currents will flow through this 2-loop circuit.

$KVR$  and  $KCR$  can be used to determine currents as a function of time.

## Strategic Analysis

Determine currents immediately after switch is closed.

Determine voltage across inductor immediately after switch is closed.

Determine  $dI_L/dt$  immediately after switch is closed.